

REMARKS

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Claim Amendments

Claim 12 has been amended to incorporate the subject matter of claim 19, as a result of which claim 19 has been cancelled, without prejudice or disclaimer.

Claim 12 has also been amended to limit A^{n-} to $\text{SiO}(\text{OH})_3^-$, SiO_4^{4-} , or a mixture thereof.

Claims 1, 2-7, 11, 14, 17 and 25-30 have been cancelled, without prejudice or disclaimer.

Claims 20-23 have been amended to depend from claim 12.

New claims 31 and 32 have been added to the application. These claims are supported by original claim 17, and page 18, lines 2-4 of the specification.

Claim Objection

The objection to claim 30 is rendered moot by the cancellation of the claim.

Patentability Arguments

The patentability of the present invention over the disclosures of the references relied upon by the Examiner in rejecting the claims will be apparent upon consideration of the following remarks.

Rejections Under 35 U.S.C. § 103(a)

Claims 1, 11-12, 17-19, 21, 24-26 and 30 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Enoki et al. (WO 03/010091, hereafter “Enoki”) with evidence from Silicone (Si) and Water (Lenntech, 1989).

Claims 20, 23 and 27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Enoki et al. in view of Katsuki et al. (US 6,291,570) with evidence from Silicone (Si) and Water.

Claim 22 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Enoki et al. in view of Katsuki et al., Miyata et al. (US 3,879,525) and Kooli et al. (J. Mat. Sci, 1993) with evidence from Silicone (Si) and Water.

Claims 1, 11-12, 17-19, 21, 24-26, 27, 28, 29, and 30 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Enoki et al. in view of Katsuki et al. and Miyata et al. with evidence from Silicone (Si) and Water.

Each of these rejections is respectfully traversed.

Discussion regarding hydrotalcite

In the fifth paragraph on page 5 of the outstanding Office Action, the Examiner takes the following position: “Enoki teaches that other stabilizers can be used in combination with the silicate particles, such as zeolite (see par [0097] having ions such as Zn, Mg, or the like. (See par [0100]) Enoki exemplifies hydrotalcite as one of these stabilizers. (See par [0220]).”

However, Applicants respectfully disagree with the Examiner’s assertion that Enoki teaches hydrotalcite as a stabilizer to be used in combination with the silicate particles.

Enoki describes zeolite, organotin stabilizer, perchloric acid, a zinc salt of a higher fatty acid, a resin acid, or a boric acid compound as stabilizers which may be used in combination with the basic silicate particles of the invention. Please see paragraphs [0097] – [0121] of US ‘660, which is relied upon by the Examiner as the English translation of Enoki.

Enoki describes hydrotalcite in paragraph 0220. However, contrary to the Examiner’s assertion, Enoki **does not use hydrotalcite with calcium-type basic silicate. Enoki uses hydrotalcite alone.** (Please see Table 5 of US ‘660.)

Accordingly, Enoki does not teach or suggest hydrotalcite as one of stabilizers which may be used in combination with basic silicate. Rather, Enoki considers hydrotalcite as a **comparative agent** of basic silicate.

As discussed above, claim 12 has been amended to incorporate the subject matter of previous claim 19, and therefore, requires the presence of 0.1 to 10 parts by weight of hydrotalcite. This limitation is not taught or suggested by Enoki.

Discussion regarding thermal stability

The composition of the present invention shows superior thermal stability, as demonstrated by the color at the first stage of thermal stabilizer measurement, and the time to blacken. Examples 87 and 93 of Applicants’ specification are compared in the table below.

Example 87 has 100 weight percent solid solution calcium hydroxide CH 42 (described on page 37 of the specification), and Example 93 has 50 weight percent solid solution calcium hydroxide CH42 and 50 weight percent hydrotalcite (HT1) (described on page 39 of the specification). The preparation of Examples 87 and 93 is described on page 48 of the specification.

As is evident from the following table, the combination of calcium hydroxide and hydrotalcite (Ex. 93) shows better thermal stability than calcium hydroxide alone (Ex. 87).

| Ex. No. | 87 | 93 |
|--|-----|-----|
| Solid Solution Calcium Hydroxide (CH42) | 100 | 50 |
| Hydrotalcite (HT1) | | 50 |
| Color at the first stage Of Thermal Stabilizer measurement * | +++ | + |
| Time to Blacken ** | 100 | 150 |

Enoki fails to teach or suggest the combination of the calcium hydroxide of Applicants' recited formula (1) **together with hydrotalcite**. Accordingly, the reference also fails to recognize the superior and unexpected results achieved by such a combination.

Discussion of Solid Solution

As discussed on page 10 of the response filed September 8, 2009, Aⁿ of Applicants' recited formula (1) is contained **in calcium hydroxide as a solid solution** in the present invention. Please see page 5, line 27 of the specification. Specifically, please again refer to the X-ray diffraction charts submitted with the response of September 8, 2009. Although Example 23 of Applicants' specification contains 3.0 wt% of SiO₂, there is no peak on the X-ray diffraction chart according to this example which indicates the existence of SiO₂. Rather, the X-ray diffraction pattern of the obtained powder shows only the pattern of calcium hydroxide, as demonstrated by comparison with the X-ray diffraction chart of calcium hydroxide of JCPDS (Joint Committee of Powder Diffraction Standard). Accordingly, the SiO₂ in Applicants' invention is contained **in the calcium hydroxide as a solid solution**.

On the contrary, in the teachings of Enoki, an alkaline earth metal silicate is formed **on the surface of** the hydroxide particle in Enoki. Please see paragraph [0079] of the reference, which states, “The alkaline earth metal basic silicate particles according to the present invention are produced by heating alkaline earth metal hydroxide particles and amorphous silicic acid . . . and forming an alkaline earth metal silicate **on the surface of the hydroxide particles** . . .” (Emphasis added.) Accordingly, it is evident that the structure of the calcium hydroxide of Applicants’ claims is completely different from that of Enoki.

Summary

For the reasons described in detail above, the subject matter of Applicants’ claims is patentable over the teachings of Enoki. The secondary references cited in the Office Action, i.e., Katsuki et al., Miyata et al., and Kooli et al., are relied upon by the Examiner to *allegedly* teach limitations of dependent claims. However, these references do not remedy the above-discussed deficiencies of Enoki.

Accordingly, the subject matter of Applicants’ claims is patentable over each of the cited combinations of references for the reasons provided above. Withdrawal of each of the rejections is respectfully requested.

Conclusion

Therefore, in view of the foregoing amendments and remarks, it is submitted that each of the grounds of objection and rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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June 30, 2010